A.D. 1871, 6*th* SEPTEMBER. N° 2353.

SPECIFICATION

OF

JOHN TONKIN COCKING.

SPLINTS.

LONDON:
PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY:
PUBLISHED AT THE GREAT SEAL PATENT OFFICE,
25, SOUTHAMPTON BUILDINGS, HOLBORN.
Price 4d. 1872.

A.D. 1871, *6th* September. N° 2353.

Splints.

LETTERS PATENT to John Tonkin Cocking, of Penzance, in the County of Cornwall, for the Invention of "Improvements in Splints and in the Manufacture of Sheets of Material suitable for Forming Splints.

Sealed the 13th February 1872, and dated the 6th September 1871.

PROVISIONAL SPECIFICATION left by the said John Tonkin Cocking at the Office of the Commissioners of Patents, with his Petition, on the 6th September 1871.

I, John Tonkin Cocking, of Penzance, in the County of Cornwall, do hereby declare the nature of the said Invention for "Improvements in Splints and in the Manufacture of Sheets of Material suitable for Forming Splints," to be as follows :—

According to this Invention I form sheets of a plastic and porous material, suitable for forming splints, from hair, wool, or other animal fibre, felted together and subsequently "proofed" with a proofing solution, composed by preference of about,

30 parts shellac,
10 „ resin,
4 „ frankincence,
2 „ borax, dissolved in water,

about 1 part methylated spirit is added. This composition is applied by a brush to the sheets of felt, and the sheets are then passed through rollers, and subsequently treated in a similar manner to that adopted when proofing ordinary felt hats. Sheets of material are thus produced which are plastic when heated and rigid when cold or at the ordinary temperature of the body. In order also that the sheets of material may be sufficiently porous to admit of respiration through them, I prefer to add vegetable fibres, such as cotton or jute, to the animal fibre before felting it together; the vegetable fibre may be added in the proportion of about $^1/_8$th.

To form splints from strips of material prepared as above described, the strips are first cut to the required shape and rendered plastic by passing them through hot water, or otherwise applying heat to them. The strip in a plastic state is then applied to the limb to which the splint is to be fitted, and is pressed gently till the splint has set. The splint thus prepared and fitted will retain its shape, and will be cool and light, and cause little if any inconvenience to the patient.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said John Tonkin Cocking in the Great Seal Patent Office on the 5th March 1872.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, John Tonkin Cocking, of Penzance, in the County of Cornwall, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Sixth day of September, in the year of our Lord One thousand eight hundred and seventy-one, in the thirty-fifth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said John Tonkin Cocking, Her special license that I, the said John Tonkin Cocking, my executors, administrators, and assigns, or such others as I, the said John Tonkin Cocking, my executors, administrators, and assigns, should at any time agree with and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "IMPROVEMENTS IN SPLINTS AND IN THE MANUFACTURE OF SHEETS OF MATERIAL SUITABLE FOR FORMING SPLINTS," upon the condition (amongst others) that I, the said John Tonkin Cocking, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascertain the nature of the said Invention and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said John Tonkin Cocking, do hereby declare the nature of the said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement thereof, that is to say:

According to this Invention I form sheets of a plastic and porous material, suitable for forming splints, from hair, wool, or other animal fibre felted together and subsequently "proofed" with a proofing solution composed by preference of about,

30	parts	shellac,
10	„	resin,
4	„	frankinsence,
2	„	borax, dissolved in water,

about 1 part methylated spirit added, or the above gums in the same proportions, dissolved in alcohol, instead of using the borax. This composition is applied to the sheets of felt, and the sheets are subsequently treated in a similar manner to that adopted when proofing ordinary felt hats, and are pressed by rollers, or otherwise. Sheets of material are thus produced, which are plastic when heated and rigid when cold or at the ordinary temperature of the body. The sheets of felt I prefer to form of wool or wool with a slight admixture of tow or cotton.

The bat or sheet of fibre to be felted is planked in the ordinary manner without the use of acid, and in planking care should be taken to make good felt without rendering it too tight in texture. Afterwards the proofing solution before mentioned is applied to the sheet with a brush, and is well rubbed in with the brush and with the hands. The sheet is then allowed to dry for about 24 hours at a moderate heat and is then placed in a steam chest and steamed smartly for about half an hour, after which it is dried in a hot stove for forty-eight hours or more, according to the thickness of the sheet, and is then soaked in an acid bath of a strength of about one in two hundred for from 6 to 24 hours, according to the substance of the sheet, and after being dipped in a bath of urine and water is placed in a running stream to cleanse it thoroughly; the sheet is then again dried and is pressed by a press or by passing it through rollers. If white or fine orange lac is used in making the proofing solution it is better to use spirit alone as a solvent, in which case the acid bath will not be required, and it will be necessary to pay more care as to the heat of the stove. The sheet will require longer drying but not at so high a temperature. The urine bath also need not be used and the surface of the sheet can be cleaned in the usual way with soda. Sheets thus prepared from white lac will not be quite so rigid as those proofed in the manner first described, but they will not soften except at a much higher temperature, and consequently are well adapted for splints to be used in hot climates. It is also well in some cases, especially for thin and medium sheets, to combine both methods, that is, to proof first with the proofing compound diluted to, say, 16 or 18 degrees and afterwards with the spirit solution. Sheets thus prepared, although more expensive, are preferable to those where one process only is used.

To form splints from strips of material prepared as herein-before described, the strips are first cut to the required shape and rendered plastic by passing them through hot water, or otherwise applying heat to them. The strip in a plastic state is then applied to the limb to which the splint is to be fitted and is pressed gently till the splint has set. The splint thus prepared and fitted will retain its shape, and will be cool and light and cause little (if any) inconvenience to the patient.

Surgical belts and such like surgical supports for different parts of the body may likewise be formed from sheets of felt proofed as herein-before described.

Having thus described the nature of my Invention, and the manner of performing the same, I would have it understood that I claim,—

1. The manufacture of sheets of material suitable for forming splints, substantially as herein described.

2. The manufacture of splints, substantially as herein described.

In witness whereof, I, the said John Tonkin Cocking, have hereunto set my hand and seal, this Fourth day of March, in the year of our Lord One thousand eight hundred and seventy-two.

JOHN TONKIN COCKING. (L.S.)

LONDON:
Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1872.